

PTO/SB/21 (09-04)

**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	09/724,548
Filing Date	November 28, 2000
First Named Inventor	Stephen R. Quake
Art Unit	1743
Examiner Name	Brian J. Sines
Attorney Docket Number	20174C-001120US

ENCLOSURES (Check all that apply)

- | | | |
|---|---|---|
| <input type="checkbox"/> Fee Transmittal Form
<input type="checkbox"/> Fee Attached
<input type="checkbox"/> Amendment/Reply
<input type="checkbox"/> After Final
<input type="checkbox"/> Affidavits/declaration(s)
<input type="checkbox"/> Extension of Time Request
<input type="checkbox"/> Express Abandonment Request
<input checked="" type="checkbox"/> Information Disclosure Statement

<input type="checkbox"/> Certified Copy of Priority Document(s)
<input type="checkbox"/> Reply to Missing Parts/ Incomplete Application
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)
<input type="checkbox"/> Licensing-related Papers
<input type="checkbox"/> Petition
<input type="checkbox"/> Petition to Convert to a Provisional Application
<input type="checkbox"/> Power of Attorney, Revocation
Change of Correspondence Address
<input type="checkbox"/> Terminal Disclaimer
<input type="checkbox"/> Request for Refund
<input type="checkbox"/> CD, Number of CD(s) _____
<input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
SB/08
180 references
Return postcard |
|---|---|---|

Remarks

The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Townsend and Townsend and Crew LLP
Signature	<i>Patrick M. Boucher</i>
Printed name	Patrick M. Boucher
Date	November 8, 2005

Reg. No. 44,037

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Signature	<i>Janet L. Newmaker</i>
Typed or printed name	Janet L. Newmaker

Date November 8, 2005

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

On November 8, 2005

TOWNSEND and TOWNSEND and CREW LLP

By: Janet L. Newmaker
Janet L. Newmaker



PATENT
Attorney Docket No.: 20174C-001120US
Client Reference Nos.: CIT 3153
and C111.310.US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Stephen R. Quake et al.

Application No.: 09/724,548

Filed: November 28, 2000

For: Integrated Active Flux
Microfluidic Devices And
Methods

Customer No.: 20350

Confirmation No.: 8333

Examiner: Brian J. Sines

Art Unit: 1743

**SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT UNDER
37 CFR §§ 1.97 AND 1.98**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. Copies of the non-US references (in compliance with the requirements of 1287 OG 163) are enclosed.

It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.


As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

This IDS is being filed before the mailing date of the final Office Action or Notice of Allowance.

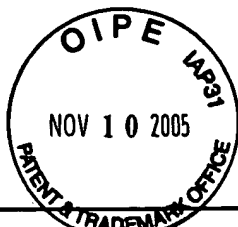
Please charge the IDS fee of \$180 to Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account. A duplicate copy of this Statement is enclosed for that purpose.

Respectfully submitted,

Date: November 8, 2005


Patrick M. Boucher
Reg. No. 44,037

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, CA 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
PMB/jln
60627280 v1



PTO/SB/08A (08-03)

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet **1** of **14**

Complete if Known

Application Number	09/724,548
Filing Date	November 28, 2000
First Named Inventor	Stephen R. Quake
Art Unit	1743
Examiner Name	Brian J. Sines
Attorney Docket Number	20174C-001120US

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
	A1	US-3,570,515	03-16-1971	Kinner	
	A2	US-3,747,628	07-24-1973	Holster et al.	
	A3	US-4,046,159	09-06-1977	Pegourie	
	A4	US-4,119,368	10-10-1978	Yamakazi	
	A5	US-4,153,855	05-08-1979	Feingold	
	A6	US-4,245,673	01-20-1981	Bouteille et al.	
	A7	US-4,434,704	03-06-1984	Surjaatmadja	
	A8	US-4,898,582	02-06-1990	Faste	
	A9	US-4,992,312	02-12-1991	Frisch	
	A10	US-5,085,562	02-04-1992	Van Lintel	
	A11	US-5,088,515	02-18-1992	Kamen	
	A12	US-5,096,388	03-17-1992	Weinberg	
	A13	US-5,126,115	06-30-1992	Fujita et al.	
	A14	US-5,164,558	11-17-1992	Huff et al.	
	A15	US-5,171,132	12-15-1992	Miyazaki	
	A16	US-5,224,843	07-06-1993	Van Lintel	
	A17	US-5,259,737	11-09-1993	Kamisuki et al.	
	A18	US-5,265,327	11-30-1993	Faris et al.	
	A19	US-5,290,240	03-01-1994	Horres, Jr.	
	A20	US-5,336,062	08-09-1994	Richter	
	A21	US-5,346,372	09-13-1994	Naruse et al.	
	A22	US-5,375,979	12-27-1994	Trah	
	A23	US-5,376,252	12-27-1994	Ekstrom	
	A24	US-5,400,741	03-28-1995	DeTitta et al.	
	A25	US-5,423,287	06-13-1995	Usami et al.	
	A26	US-5,529,465	06-25-1996	Zengerle et al.	
	A27	US-5,593,130	01-14-1997	Hansson et al.	

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete if Known		
			Application Number	09/724,548	
			Filing Date	November 28, 2000	
			First Named Inventor	Stephen R. Quake	
			Art Unit	1743	
			Examiner Name	Brian J. Sines	
Sheet	2	of	14	Attorney Docket Number	20174C-001120US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
	A28	US-5,642,015	06-24-1997	Whitehead et al.	
	A29	US-5,659,171	08-19-1997	Young et al.	
	A30	US-5,660,370	08-26-1997	Webster	
	A31	US-5,681,024	10-28-1997	Lisec et al.	
	A32	US-5,705,018	01-06-1998	Hartley	
	A33	US-5,759,014	06-02-1998	Van Lintel	
	A34	US-5,775,371	07-07-1998	Pan et al.	
	A35	US-5,788,468	08-04-1998	Dewa et al.	
	A36	US-5,836,750	11-17-1998	Cabuz	
	A37	US-5,842,787	12-01-1998	Kopf-Sill et al.	
	A38	US-5,875,817	03-02-1999	Carter	
	A39	US-5,876,187	03-02-1999	Afromowitz	
	A40	US-5,932,799	08-03-1999	Moles	
	A41	US-5,942,443	08-24-1999	Parce et al.	
	A42	US-6,007,309	12-28-1999	Hartley	
	A43	US-6,123,769	09-26-2000	Sanjoh	
	A44	US-6,155,282	12-05-2000	Zachary et al.	
	A45	US-6,174,365 B1	01-16-2001	Sanjoh	
	A46	US-6,296,673 B1	10-02-2001	Santarsiero et al.	
	A47	US-2001/0027745 A1	10-11-2001	Weigl et al.	
	A48	US-6,345,502 B1	02-12-2002	Tai et al.	
	A49	US-6,409,832 B2	06-25-2002	Weigl et al.	
	A50	US-2003/0008308 A1	01-09-2003	Enzelberger et al.	
	A51	US-2003/0138829 A1	07-24-2003	Unger et al.	
	A52	US 2004/0115838 A1	06-17-2004	Quake et al.	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet **3** of **14****Complete if Known**

Application Number	09/724,548
Filing Date	November 28, 2000
First Named Inventor	Stephen R. Quake
Art Unit	1743
Examiner Name	Brian J. Sines
Attorney Docket Number	20174C-001120US

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				
	B1	EP	0 592 094	A2	04-13-1994	International Business Machines Corporation		
	B2	EP	0 703 364	A1	03-27-1996	Fraunhofer-Gesellschaft Zur Förderung Der Angewandten Forschung E.V.		<input type="checkbox"/>
	B3	EP	0 706 004	A2	04-10-1996	Bayer Corporation		<input type="checkbox"/>
	B4	EP	0 779 436	A2	06-18-1997	Frank T. Hartley		<input type="checkbox"/>
	B5	EP	0 829 360	A2	03-18-1998	Xerox Corporation		<input type="checkbox"/>
	B6	EP	0 845 603	A1	06-03-1998	Xerox Corporation		<input type="checkbox"/>
	B7	EP	0 999 055	A2	05-10-2000	Samsung Electronics Co., Ltd.		<input type="checkbox"/>
	B8	GB	2 155 152	A	09-18-1985	Allied Corporation		<input type="checkbox"/>
	B9	GB	2 308 460	A	06-25-1997	Daewoo Electronics Co., Ltd.		<input type="checkbox"/>
	B10	WO	98/07069	A1	02-19-1998	The Regents Of The University Of Michigan		<input type="checkbox"/>
	B11	WO	99/00655	A2	01-07-1999	Immunetics		<input type="checkbox"/>
	B12	WO	99/04361	A1	01-28-1999	Diversified Scientific, Inc.		<input type="checkbox"/>
	B13	WO	99/17093	A1	04-08-1999	The Regents Of The University Of Michigan		<input type="checkbox"/>
	B14	WO	99/52633	A1	10-21-1999	Lumenal Technologies, L.P.		<input type="checkbox"/>
	B15	WO	00/00678	A1	01-06-2000	University Of Washington		<input type="checkbox"/>
	B16	WO	00/43748	A1	07-27-2000	YSI Incorporated		<input type="checkbox"/>
	B17	WO	00/60345	A1	10-12-2000	University Of Alabama At Birmingham Research Foundation		<input type="checkbox"/>
	B18	WO	01/09595	A2	02-08-2001	Emerald Biostructures, Inc.		<input type="checkbox"/>
	B19	WO	01/09595	A3	02-08-2001	Emerald Biostructures, Inc.		<input type="checkbox"/>

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	4	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C1	"Biochips," Nature Biotechnology, Vol. 18, Supplement 2000, pp. IT43-IT44, 2000	
	C2	"Chapter 9: Microfluidic Devices," Micromachined Transducers Sourcebook, pp. 779-882, 1998	
	C3	"Electro Microfluidic Dual In-Line Package (EMDIP)," Sandia National Laboratories, 2 pages, no date	
	C4	AHN, CHONG H. et al., "Fluid Micropumps Based On Rotary Magnetic Actuators," Proceedings of 1995 IEEE Micro Electro Mechanical Systems Workshop (MEMS '95), Amsterdam, Netherlands, pp. 408-412, 1/29-2/2/1995	
	C5	ANDERSON, JANELLE R. et al., "Fabrication Of Topologically Complex Three-Dimensional Microfluidic Systems In PDMS By Rapid Prototyping," Analytical Chemistry, Vol. 72, No. 14, pp. 3158-3164, 7/15/2000	
	C6	ANDERSON, ROLFE C. et al., "Microfluidic Biochemical Analysis System," Transducers '97, 1997 International Conference on Solid-State Sensors and Actuators, Chicago, Illinois, pp. 477-480, 6/16-19/1997	
	C7	ARMANI, DENIZ et al., "Re-Configurable Fluid Circuits By PDMS Elastomer Micromachining," IEEE Int. Conf. Micro Electro Mech. Syst. Tech. Digest, Vol. 12, pp. 222-227, 1999	
	C8	ASHKIN, A. et al., "Optical Trapping And Manipulation Of Single Cells Using Infrared Laser Beams," Nature, Vol. 330, No. 24, pp. 769-771, 12/31/1987	
	C9	ASHKIN, A. et al., "Optical Trapping And Manipulation Of Viruses And Bacteria," Science, Vol. 235, pp. 1517-1520, 3/20/1987	
	C10	BALLANTYNE, J. P. et al., "Selective Area Metallization By Electron-Beam Controlled Direct Metallic Deposition," J. Vac. Sci. Technol., Vol. 10, No. 6, pp. 1094-1097, 11/1973	
	C11	BENARD, W. L. et al., "A Titanium-Nickel Shape-Memory Alloy Actuated Micropump," Transducers '97, 1997 International Conference on Solid-State Sensors and Actuators, Chicago, Illinois, pp. 361-364, 6/16-19/1997	
	C12	BLOOMSTEIN, T. M. et al., "Laser-Chemical Three-Dimensional Writing For Microelectromechanics And Application To Standard-Cell Microfluidics," J. Vac. Sci. Technol. B, Vol. 10, No. 6, pp. 2671-2674, 11/1992	
	C13	BOUSSE, LUC et al., "Electrokinetically Controlled Microfluidic Analysis Systems," Annu. Rev. Biophys. Biomol. Struct., Vol. 29, pp. 155-181, 2000	
	C14	BRECHTEL, R. et al., "Control Of The Electroosmotic Flow By Metal-Salt-Containing Buffers," Journal of Chromatography A, Vol. 716, pp. 97-105, 1995	
	C15	BRYZEK, JANUSZ et al., "Micromachines On The March", IEEE Spectrum, Vol. 31, No. 5, pp. 20-31, 5/1994	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	5	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C16	BUCHAILLOT, LIONEL et al., "Silicon Nitride Thin Films Young's Modulus Determination By An Optical Non Destructive Method," Jpn. J. Appl. Phys., Vol. 36, Part 2, No. 6B, pp. L794-L797, 6/15/1997	
	C17	BUICAN, TUDOR N. et al., "Automated Single-Cell Manipulation And Sorting By Light Trapping," Applied Optics, Vol. 26, No. 24, pp. 5311-5316, 12/15/1987	
	C18	BURBAUM, JONATHAN J. et al., "New Technologies For High-Throughput Screening," Current Opinion in Chemical Biology, Vol. 1, pp. 72-78, 1997	
	C19	BUSCH, J. et al., "Methods For The Differentiation Of Microorganisms, Journal of Chromatography B, Vol. 722, pp. 263-278, 1999	
	C20	CAI, WEIWEN, et al., "High-Resolution Restriction Maps Of Bacterial Artificial Chromosomes Constructed By Optical Mapping," Proc. Natl. Acad. Sci. USA, Vol. 95, pp. 3390-3395, 3/1998	
	C21	CALKINS, KATHRYN, "Mycometrix: Rubber Chips," BioCentury, 2 pages, 10/16/2000	
	C22	CHAN, JASON H. et al., "Microfabricated Polymer Devices For Automated Sample Delivery Of Peptides For Analysis By Electrospray Ionization Tandem Mass Spectrometry," Analytical Chemistry, Vol. 71, No. 20, pp. 4437-4444, 10/15/1999	
	C23	CHIANG, YUH-MIN et al., "Characterizing The Process Of Cast Molding Microfluidic Systems," SPIE, Vol. 3877, pp. 303-311, 9/1999	
	C24	CHIU, DANIEL T. et al., "Patterned Deposition Of Cells And Proteins Onto Surfaces By Using Three-Dimensional Microfluidic Systems," PNAS, Vol. 97, No. 6, pp. 2408-2413, 3/14/2000	
	C25	CHOU, HOU-PU et al., "Disposable Microdevices For DNA Analysis And Cell Sorting," Proc. Solid-State Sensor and Actuator Workshop, Hilton Head, South Carolina, pp. 11-14, 6/8-11/1998	
	C26	CHOU, HOU-PU et al., "Integrated Elastomer Fluidic Lab-On-A-Chip-Surface Patterning And DNA Diagnostics," Proceedings of the Solid State Actuator and Sensor Workshop, Hilton Head, South Carolina, 4 pages, 2000	
	C27	CHOU, HOU-PU et al., "Microfabricated Devices For Sizing DNA And Sorting Cells," Micro- and Nanofabricated Structures and Devices for Biomedical Environmental Applications, Proceedings of SPIE, Vol. 3258, pp. 181-187, 1998	
	C28	CHOU, HOU-PU et al., "Multiple Disease Diagnostics On A Single Chip," Biophysics Lab, Caltech, pp. 1-4, 3/1/2000	
	C29	DAVILA, HERMAN MORENO, "Molecular And Functional Diversity Of Voltage-Gated Calcium Channels," Annals of the New York Academy of Sciences, Vol. 868, pp. cover, 102-117, 1999	
	C30	DHARMATILLEKE, SAMAN et al., "Three-Dimensional Silicone Device Fabrication And Interconnection Scheme For Microfluidic Applications Using Sacrificial Wax Layers," Micro-Electro-Mechanical Systems (MEMS), Vol. 2, pp. 413-418, 2000	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	6	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C31	DUFFY, DAVID C. et al., "Patterning Electroluminescent Materials With Feature Sizes As Small As 5µm Using Elastomeric Membranes As Masks For Dry Lift-Off," Advanced Materials, Vol. 11, No. 7, pp. 546-552, 1999	
	C32	DUFFY, DAVID C. et al., "Rapid Prototyping Of Microfluidic Switches In Poly(dimethyl siloxane) And Their Actuation By Electro-Osmotic Flow," J. Micromech. Microeng., Vol. 9, pp. 211-217, 1999	
	C33	DUFFY, DAVID C. et al., "Rapid Prototyping Of Microfluidic Systems In Poly(dimethylsiloxane)," Analytical Chemistry, Vol. 70, No. 23, pp. 4974-4984, 12/1/1998	
	C34	EFFENHAUSER, CARLO S. et al., "Integrated Capillary Electrophoresis On Flexible Silicone Microdevices: Analysis Of DNA Restriction Fragments And Detection Of Single DNA Molecules On Microchips," Analytical Chemistry, Vol. 69, No. 17, pp. 3451-3457, 9/1/1997	
	C35	EFFENHAUSER, CARLO S. et al., "Integrated Chip-Based Capillary Electrophoresis," Electrophoresis, Vol. 18, pp. 2203-2213, 1997	
	C36	ERICSON, CHRISTER et al., "Electroosmosis- And Pressure-Driven Chromatography In Chips Using Continuous Beds," Analytical Chemistry, Vol. 72, No. 1, 1/1/2000	
	C37	FAHRENBERG, J. et al., "A Microvalve System Fabricated By Thermoplastic Molding," J. Micromech. Microeng., Vol. 5, pp. 169-171, 1995	
	C38	FETTINGER, J. C. et al., "Stacked Modules For Micro Flow Systems In Chemical Analysis: Concept And Studies Using An Enlarged Model," Sensors and Actuators B, Vol. 17, pp. 19-25, 1993	
	C39	FIGEYS, DANIEL et al., "An Integrated Microfluidics-Tandem Mass Spectrometry System For Automated Protein Analysis," Analytical Chemistry, Vol. 70, No. 18, pp. 3728-3734, 9/15/1998	
	C40	FIGEYS, DANIEL et al., "Nanoflow Solvent Gradient Delivery From A Microfabricated Device For Protein Identifications By Electrospray Ionization Mass Spectrometry," Analytical Chemistry, Vol. 70, No. 18, pp. 3721-3727, 9/15/1998	
	C41	FOLCH, A. et al., "Molding Of Deep Polydimethylsiloxane Microstructures For Microfluidics And Biological Applications," Journal of Biomechanical Engineering, Vol. 121, pp. 28-34, 2/1999	
	C42	FULWYLER, M. J., "Electronic Separation Of Biological Cells By Volume," Science, pp. 910-911, 11/1965	
	C43	GALAMBOS, PAUL et al., "Electrical And Fluidic Packaging Of Surface Micromachined Electro-Microfluidic Devices," 8 pages, no date	
	C44	GASS, V. et al., "Integrated Flow-Regulated Silicon Micropump," Sensors and Actuators A, Vol. 43, pp. 335-338, 1994	
	C45	GERLACH, TORSTEN, "Pumping Gases By A Silicon Micro Pump With Dynamic Passive Valves," Transducers '97, 1997 International Conference on Solid-State Sensors and Actuators, Chicago, Illinois, pp. 357-360, 6/16-19/1997	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/724,548	
			Filing Date	November 28, 2000	
			First Named Inventor	Stephen R. Quake	
			Art Unit	1743	
			Examiner Name	Brian J. Sines	
Sheet	7	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C46	GOLL, C. et al., "Microvalves With Bistable Buckled Polymer Diaphragms," J. Micromech. Microeng., Vol. 6, pp. 77-79, 1996	
	C47	GONZALEZ, JESUS E. et al., "Improved Indicators Of Cell Membrane Potential That Use Fluorescence Resonance Energy Transfer," Chemistry & Biology, Vol. 4, No. 4, pp. 269-277, 4/1997	
	C48	GRAVESEN, PETER et al., "Microfluidics-A Review," J. Micromech. Microeng., Vol. 3, pp. 168-192, 1993	
	C49	GREENE, CHANA, "Characterizing The Properties Of PDMS," pp. 1-11, Summer 2000	
	C50	GUÉRIN, L. J. et al., "Simple And Low Cost Fabrication Of Embedded Micro-Channels By Using A New Thick-Film Photoplastic," Transducers '97, 1997 International Conference on Solid-State Sensors and Actuators, Chicago, Illinois, pp. 1419-1422, 6/18-19/1997	
	C51	HENION, JACK et al., "Capillary Electrophoresis/Mass Spectrometry: From One Meter Capillaries To Chip-Based Devices," 2 pages, 1999	
	C52	HICKS, JENNIFER, "Genetics And Drug Discovery Dominate Microarray Research," R&D Magazine, pp. 28-33, 2/1999	
	C53	HOPFGARTNER, GERARD et al., "Exact Mass Measurement Of Product Ions For The Structural Elucidation Of Drug Metabolites With A Tandem Quadrupole Orthogonal-Acceleration Time-Of-Flight Mass Spectrometer," Journal of The American Society for Mass Spectrometry, Vol. 10, pp. cover, 1305-1314, 12/1999	
	C54	HORNBECK, LARRY J. et al., "Bistable Deformable Mirror Device," Spatial Light Modulators and Applications 1988 Technical Digest Series, Summaries of papers presented at the Spatial Light Modulators and Applications Topical Meeting, Optical Society of America, Vol. 8, Postconference Edition, A215, pp. 107-110, 6/15-17/1988	
	C55	HOSOKAWA, KAZUO et al., "Droplet-Based Nano/Picoliter Mixer Using Hydrophobic Microcapillary Vent," 1999 IEEE International Conference on Micro Electro Mechanical Systems, Technical Digest, pp. 388-393, 1999	
	C56	HOSOKAWA, KAZUO et al., "Handling Of Picoliter Liquid Samples In A Poly(dimethylsiloxane)-Based Microfluidic Device," Analytical Chemistry, Vol. 71, No. 20, pp. 4781-4785, 10/15/1999	
	C57	IKUTA, KOJI et al., "Three Dimensional Micro Integrated Fluid Systems (MIFS) Fabricated By Stereo Lithography," IEEE, pp. 1-6, 1994	
	C58	JACOBSON, KEN et al., "International Workshop On The Application Of Fluorescence Photobleaching Techniques To Problems In Cell Biology," Federation Proceedings, Vol. 42, No. 1, pp. 72-79, 1/1983	
	C59	JACOBSON, STEPHEN C. et al., "High-Speed Separations On A Microchip," Analytical Chemistry, Vol. 66, No. 7, pp. 1114-1118, 4/1/1994	
	C60	JACOBSON, STEPHEN C. et al., "Microfluidic Devices For Electrokinetically Driven Parallel And Serial Mixing," Analytical Chemistry, Vol. 71, No. 20, pp. 4455-4459, 10/15/1999	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	8	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²	
	C61	JERMAN, HAL, "Electrically-Activated, Normally-Closed Diaphragm Valves," Transducers '91, 1991 International Conference on Solid-State Sensors and Actuators, pp. cover, 1045-1048, 1991		
	C62	JO, BYUNG-HO et al., "Fabrication Of Three-Dimensional Microfluidic Systems By Stacking Molded Polydimethylsiloxane (PDMS) Layers" SPIE, Vol. 3877, pp. 222-229, 9/1999		
	C63	JO, BYUNG-HO et al., "Three-Dimensional Micro-Channel Fabrication In Polydimethylsiloxane (PDMS) Elastomer," Journal of Microelectromechanical Systems, Vol. 9, No. 1, pp. 76-81, 3/2000		
	C64	JUNG, D. R. et al., "Chemical And Physical Interactions At Metal/Self-Assembled Organic Monolayer Interfaces," pp. 1-54, 1994		
	C65	KAGAN, C. R., "Organic-Inorganic Hybrid Materials As Semiconducting Channels In Thin-Film Field-Effect Transistors," Science, Vol. 286, pp. 945-947, 10/29/1999		
	C66	KAPUR, RAVI et al., "Fabrication And Selective Surface Modification Of 3-Dimensionally Textured Biomedical Polymers From Etched Silicon Substrates," Journal of Biomedical Materials Research, Vol. 33, pp. 205-216, 1996		
	C67	KAWANO, YASUSHI et al., "Rapid Isolation And Identification Of Staphylococcal Exoproteins By Reverse Phase Capillary High Performance Liquid Chromatography-Electrospray Ionization Mass Spectrometry," FEMS Microbiology Letters, Vol. 189, pp. 103-108, 2000		
	C68	KELLER, RICHARD A. et al., "Single-Molecule Fluorescence Analysis In Solution," Applied Spectroscopy, Vol. 50, No. 7, pp. 12A-30A, 7/1996		
	C69	KENIS, PAUL J. A. et al., "Microfabrication Inside Capillaries Using Multiphase Laminar Flow Patterning," Science, Vol. 285, pp. 83-85, 7/2/1999		
	C70	KHOO, MELVIN et al., "A Novel Micromachined Magnetic Membrane Microfluid Pump," pp. 1-4, no date		
	C71	KIM, ENOCH et al., "Micromolding In Capillaries: Applications In Materials Science," J. Am. Chem. Soc., Vol. 118, No. 24, pp. 5722-5731, 1996		
	C72	KIM, ENOCH et al., "Polymer Microstructures Formed By Moulding In Capillaries," Nature, Vol. 376, pp. 581-584, 8/17/1995		
	C73	KIRK-OTHEMER, "Concise Encyclopedia of Chemical Technology," John Wiley & Sons, 5 pages, no date		
	C74	KUHN, LAWRENCE et al., "Silicon Charge Electrode Array For Ink Jet Printing," IEEE Transactions on Electron Devices, Vol. ED-25, No. 10, pp. 1257-1260, 10/1978		
	C75	KUMAR, AMIT et al., "Features Of Gold Having Micrometer To Centimeter Dimensions Can Be Formed Through A Combination Of Stamping With An Elastomeric Stamp And An Alkanethiol 'Ink' Followed By Chemical Etching," Appl. Phys. Lett., Vol. 63, No. 14, pp. 2002-2004, 10/4/1993		
	C76	KUMAR, AMIT et al., "Patterning Self-Assembled Monolayers: Applications In Materials Science," Langmuir, Vol. 10, pp. 1498-1511, 1994		

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/724,548	
			Filing Date	November 28, 2000	
			First Named Inventor	Stephen R. Quake	
			Art Unit	1743	
			Examiner Name	Brian J. Sines	
Sheet	9	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C77	LAGALLY, ERIC T. et al., "Monolithic Integrated Microfluidic DNA Amplification And Capillary Electrophoresis Analysis System," Sensors and Actuators B, Vol. 63, pp. 138-146, 2000	
	C78	LAMMERINK, T. S. J. et al., "Modular Concept For Fluid Handling Systems," IEEE, pp. 389-394, 1996	
	C79	LAZAR, IULIA M. et al., "Novel Microfabricated Device For Electrokinetically Induced Pressure Flow And Electrospray Ionization Mass Spectrometry," Journal of Chromatography A, Vol. 892, pp. 195-201, 2000	
	C80	LESSARD, GUILLAUME A. et al., "A Scanning Apertureless Fluorescence Microscope," 8 pages, no date	
	C81	LEVINE, LEANNA M. et al., "Measurement Of Specific Protease Activity Utilizing Fluorescence Polarization," Analytical Biochemistry, Vol. 247, pp. 83-88, 1997	
	C82	LI, JIANJUN et al., "Integration Of Microfabricated Devices To Capillary Electrophoresis-Electrospray Mass Spectrometry Using A Low Dead Volume Connection: Application To Rapid Analyses Of Proteolytic Digests," Analytical Chemistry, Vol. 71, No. 15, pp. 3036-3045, 8/1/1999	
	C83	LICKLIDER, LARRY et al., "A Micromachined Chip-Based Electrospray Source For Mass Spectrometry," Analytical Chemistry, Vol. 72, No. 2, pp. 367-375, 1/15/2000	
	C84	LIN, L. Y. et al., "Free-Space Micromachined Optical Switches For Optical Networking," IEEE Journal of Selected Topics in Quantum Electronics, Vol. 5, No. 1, pp. 4-9, 1/1999	
	C85	LIN, YUEHE et al., "Laser Micromachined Isoelectric Focusing Device On Polymer Substrate For Electrospray Mass Spectrometry," SPIE, Vol. 3877, pp. 28-35, 9/1999	
	C86	LIU, HANGHUI et al., "Development Of Multichannel Devices With An Array Of Electrospray Tips For High-Throughput Mass Spectrometry," Analytical Chemistry, Vol. 72, No. 14, pp. 3303-3310, 7/15/2000	
	C87	LLOPIS, JUAN et al., "Ligand-Dependent Interactions Of Coactivators Steroid Receptor Coactivator-1 And Peroxisome Proliferator-Activated Receptor Binding Protein With Nuclear Hormone Receptors Can Be Imaged In Live Cells And Are Required For Transcription," PNAS, Vol. 97, No. 8, pp. 4363-4368, 4/11/2000	
	C88	LÖTTERS, J C et al., "The Mechanical Properties Of The Rubber Elastic Polymer Polydimethylsiloxane For Sensor Applications," J. Micromech. Microeng., Vol. 7, pp. 145-147, 1997	
	C89	LUCY, CHARLES A. et al., "Characterization Of The Cationic Surfactant Induced Reversal Of Electroosmotic Flow In Capillary Electrophoresis," Anal. Chem., Vol. 68, pp. 300-305, 1996	
	C90	MAHAJAN, NUPAM P. et al., "Novel Mutant Green Fluorescent Protein Protease Substrates Reveal The Activation Of Specific Caspases During Apoptosis," Chemistry & Biology, Vol. 6, No. 6, pp. 401-409, 6/1999	
	C91	MALUF, N., "An Introduction To Microelectromechanical Systems Engineering," Artech House Publishers, Boston London, pp. 42-45, 12/1999	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/724,548	
			Filing Date	November 28, 2000	
			First Named Inventor	Stephen R. Quake	
			Art Unit	1743	
			Examiner Name	Brian J. Sines	
Sheet	10	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C92	MANZ, A. et al., "Micromachining Of Monocrystalline Silicon And Glass For Chemical Analysis Systems," Trends in Analytical Chemistry, Vol. 10, No. 5, pp. 144-149, 1991	
	C93	MARSHALL, SID, "Fundamental Changes Ahead For Lab Instrumentation," R&D Magazine, 5 pages, 2/1999	
	C94	MARSILI, RAY, "Lab-On-A-Chip Poised To Revolutionize Sample Prep," R&D Magazine, 5 pages, 2/1999	
	C95	MAULE, JOHN, "Pulsed-Field Gel Electrophoresis," Molecular Biotechnology, Vol. 9, pp. 107-126, 1998	
	C96	MCDONALD, J. COOPER et al., "Fabrication Of Microfluidic Systems In Poly(dimethylsiloxane)," Electrophoresis, Vol. 21, pp. 27-40, 2000	
	C97	MELAMED, MYRON R. et al., "Flow Cytometry And Sorting," John Wiley & Sons, 32 pages, 1979	
	C98	MULLER, RICHARD S. et al., "Surface-Micromachined Microoptical Elements And Systems," Proceedings of the IEEE, Vol. 86, No. 8, pp. 1705-1720, 8/1998	
	C99	NAGAI, YASUO et al., "A Fluorescent Indicator For Visualizing cAMP-Induced Phosphorylation In Vivo," Nature Biotechnology, Vol. 18, pp. 313-316, 3/2000	
	C100	NEW OBJECTIVE website, "What Is Electrospray," www.newobjective.com/electrospray/electrospray.html, 4 pages, 9/22/2000	
	C101	OLESCHUK, RICHARD D. et al., "Analytical Microdevices For Mass Spectrometry," Trends In Analytical Chemistry, Vol. 19, No. 6., pp. 379-388, 2000	
	C102	OLSSON, ANDERS et al., "Simulation Studies Of Diffuser And Nozzle Elements For Valve-Less Micropumps," Transducers '97, 1997 International Conference on Solid-State Sensors and Actuators, Chicago, Illinois, pp. 1039-1042, 6/16-19/1997	
	C103	O'REILLY, MARIE-ANNE J. et al., "The Technique Of Pulsed Field Gel Electrophoresis And Its Impact On Molecular Immunology," Journal of Immunological Methods, Vol. 131, pp. 1-13, 1990	
	C104	PARKER, GREGORY J. et al., "Development Of High Throughput Screening Assays Using Fluorescence Polarization: Nuclear Receptor-Ligand-Binding And Kinase/Phosphatase Assays," Journal of Biomolecular Screening, Vol. 5, No. 2, pp. 77-88, 2000	
	C105	PETHIG, RONALD et al., "Applications Of Dielectrophoresis In Biotechnology," Tibtech, Vol. 15, pp. 426-432, 10/1997	
	C106	PETTY, JEFFREY T. et al., "Characterization Of DNA Size Determination Of Small Fragments By Flow Cytometry," Anal. Chem., Vol. 67, pp. 1755-1761, 1995	
	C107	PROTANA website, "NanoES Products," www.protana.com/products/default.asp, 3 pages, 9/19/2000	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	11	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²	
	C108	QIN, DONG et al., "Elastomeric Light Valves," Adv. Mater., Vol. 9, No. 5, pp. 407-410, 1997		
	C109	QIN, DONG et al., "Photolithography With Transparent Reflective Photomasks," J. Vac. Sci. Technol. B, Vol. 16, No. 1, pp. 98-103, 1/1998		
	C110	QUAKE, STEPHEN R. et al., "From Micro- To Nanofabrication With Soft Materials," Science, Vol. 290, pp. 1536-1540, 11/24/2000		
	C111	RAPP, R. et al., "LIGA Micropump For Gases And Liquids," Sensors and Actuators A, Vol. 40, pp. 57-61, 1/1994		
	C112	ROYLANCE, LYNN MICHELLE et al., "A Batch-Fabricated Silicon Accelerometer," IEEE Transactions on Electron Devices, Vol. ED-26, No. 12, pp. 1911-1917, 12/1979		
	C113	SAMAD, AKHTAR et al., "Optical Mapping: A Novel, Single-Molecule Approach To Genomic Analysis," Genome Research, pp. 1-4, 1995		
	C114	SANJOH, AKIRA et al., "Spatiotemporal Protein Crystal Growth Studies Using Microfluidic Silicon Devices," Journal of Crystal Growth, Vol. 196, pp. 691-702, 1999		
	C115	SCHASFOORT, RICHARD B. M. et al., "Field-Effect Flow Control For Microfabricated Fluidic Networks," Science, Vol. 286, pp. 942-945, 10/29/1999		
	C116	SCHOMBURG, W. K. et al., "Fabrication Of Polymer Microcomponents With The AMANDA-Process," New Materials and Directions, Euroensors XII, pp. 711-714, 9/13-16/1998		
	C117	SCHUELLER, OLIVIER J. A. et al., "Fabrication Of Glassy Carbon Microstructures By Soft Lithography," Sensors and Actuators A, Vol. 72, pp. 126-139, 1999		
	C118	SCHWARTZ, DAVID C. et al., "Optical Mapping Approaches To Molecular Genomics," Current Opinion in Biotechnology, Vol. 8, pp. 70-74, 1997		
	C119	SEETHALA, RAMAKRISHNA et al., "A Fluorescence Polarization Competition Immunoassay For Tyrosine Kinases," Analytical Biochemistry, Vol. 255, pp. 257-262, 1998		
	C120	SHEVCHENKO, ANDREJ et al., "Rapid 'de Novo' Peptide Sequencing By A Combination Of Nanoelectrospray, Isotopic Labeling And A Quadrupole/Time-Of-Flight Mass Spectrometer," Rapid Communications in Mass Spectrometry, Vol. 11, pp. 1015-1024, 1997		
	C121	SHINOHARA, JUN et al., "A High Pressure-Resistance Micropump Using Active And Normally-Closed Valves," IEEE, pp. 86-91, 2000		
	C122	SHOJI, SHUICHI, "Fluids For Sensor Systems," Topics in Current Chemistry, Vol. 194, pp. 167-188, 1998		
	C123	SHOJI, SHUICHI et al., "Smallest Dead Volume Microvalves For Integrated Chemical Analyzing Systems," Transducers '91, 1991 International Conference on Solid-State Sensors and Actuators, San Francisco, California, pp. cover, 1052-1055, 1991		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/724,548	
			Filing Date	November 28, 2000	
			First Named Inventor	Stephen R. Quake	
			Art Unit	1743	
			Examiner Name	Brian J. Sines	
Sheet	12	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C124	SMITS, J.G., "Piezoelectric Micropump With Three Valves Working Peristaltically," Sensors and Actuators, Vol. A21-A23, pp. 203-206, 1990	
	C125	SOHN, L. L. et al., "Capacitance Cytometry: Measuring Biological Cells One By One," PNAS, Vol. 97, No. 20, pp. 10687-10690, 9/26/2000	
	C126	STEMMER, WILLEM P. C. et al., "Rapid Evolution Of A Protein <i>in vitro</i> By DNA Shuffling," Nature, Vol. 370, pp. 389-390, 8/4/1994	
	C127	SWEET, RICHARD G., "Flow Sorters For Biologic Cells," pp. 177-189, no date	
	C128	TAKAHASHI, AKIYUKI et al., "Measurement Of Intracellular Calcium," Physiological Reviews, Vol. 79, No. 4, pp. 1089-1125, 10/1999	
	C129	THOMPSON, L. F. et al., "Introduction To Microlithography," 185th Meeting of the American Chemical Society, Seattle, WA, pp. 2 cover pages, 1-13, 3/20-25/1983	
	C130	TODD, PAUL et al., "Cell Electrophoresis," pp. 217-229, no date	
	C131	TUFTE, O. N. et al., "Silicon Diffused-Element Piezoresistive Diaphragms," Journal of Applied Physics, Vol. 33, No. 11, pp. 3322-3327, 11/1962	
	C132	Ullmann's Encyclopedia of Industrial Chemistry, Sections 6 to 6.3, Topic: Carbon Black, Sixth Edition, 7 pages, 1999	
	C133	UNGER, MARC A. et al., "Single-Molecule Fluorescence Observed With Mercury Lamp Illumination," Biotechniques, Vol. 27, No. 5, pp. 1008-1014, 11/1999	
	C134	VAN DE POL, F.C.M. et al., "A Thermo-Pneumatic Actuation Principle For A Microminiature Pump And Other Micromechanical Devices," Sensors and Actuators, Vol. 17, Nos. 1-2, pp. 139-143, 5/3/1989	
	C135	VAN DE POL, F.C.M. et al., "Micro Liquid Handling Devices - A Review," Micro Systems Technologies, Vol. 90, pp. 799-805, 1990	
	C136	VAN DEN BERG, A. et al., "Micro Total Analysis Systems," Proceedings of the μ TAS '94 Workshop, University of Twente, The Netherlands, 17 pages, 11/21-22/1994	
	C137	VERPOORTE, ELISABETH M. J. et al., "Three-Dimensional Micro Flow Manifolds For Miniaturized Chemical Analysis Systems," J. Micromech. Microeng., Vol. 7, pp. 246-256, 1994	
	C138	VIEIDER, CHRISTIAN et al., "A Pneumatically Actuated Micro Valve With A Silicon Rubber Membrane For Integration With Fluid Handling Systems," Transducers '95, 8th International Conference on Solid-State Sensors and Actuators and Eurosensors IX, Stockholm, Sweden, pp. 284-286, 6/25-29/1995	
	C139	VOLKMUTH, W. D. et al., "DNA Electrodifusion In A 2D Array Of Posts, Physical Review Letters, Vol. 72, No. 13, pp. 2117-2120, 3/28/1994	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	13	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C140	VOLKMUTH, W. D. et al., "DNA Electrophoresis In Microlithographic Arrays," Nature, Vol. 358, pp. 600-602, 8/13/1992	
	C141	WASHIZU, MASAO et al., "Molecular Dielectrophoresis Of Biopolymers," IEEE Transactions on Industry Applications, Vol. 30, No. 4, pp. 835-843, 7/1994	
	C142	WILBUR, JAMES L. et al., "Lithographic Molding: A Convenient Route To Structures With Sub-Micrometer Dimensions," Adv. Mater., Vol. 7, No. 7, pp. 649-652, 1995	
	C143	WILM, MATTHIAS et al., "Femtomole Sequencing Of Proteins From Polyacrylamide Gels By Nano-Electrospray Mass Spectrometry," Nature, Vol. 379, pp. 466-469, 2/1/1996	
	C144	XIA, YOUNAN et al., "Complex Optical Surfaces Formed By Replica Molding Against Elastomeric Masters," Science, Vol. 273, pp. 347-349, 7/19/1996	
	C145	XIA, YOUNAN et al., "Micromolding Of Polymers In Capillaries: Applications In Microfabrication," Chem. Mater., Vol. 8, No. 7, pp. 1559-1566, 1996	
	C146	XIA, YOUNAN et al., "Reduction In The Size Of Features Of Patterned SAMs Generated By Microcontact Printing With Mechanical Compression Of The Stamp," Adv. Mater., Vol. 7, No. 5, pp. 471-473, 1995	
	C147	XIA, YOUNAN et al., "Soft Lithography," Angew. Chem. Int. Ed., Vol. 37, pp. 551-575, 1998	
	C148	XU, BING et al., "Making Negative Poisson's Ratio Microstructures By Soft Lithography," Adv. Mater., Vol. 11, No. 14, pp. 1186-1189, 1999	
	C149	XU, JINGDONG et al., "Room-Temperature Imprinting Method For Plastic Microchannel Fabrication," Analytical Chemistry, Vol. 72, No. 8, pp. 1930-1933, 4/15/2000	
	C150	XU, XIANG et al., "Detection Of Programmed Cell Death Using Fluorescence Energy Transfer," Nucleic Acids Research, Vol. 26, No. 8, pp. 2034-2035, 1998	
	C151	XUE, QIFENG et al., "Integrated Multichannel Microchip Electrospray Ionization Mass Spectrometry: Analysis Of Peptides From On-Chip Tryptic Digestion of Melittin," Rapid Communications In Mass Spectrometry, Vol. 11, 1253-1256, 1997	
	C152	XUE, QIFENG et al., "Multichannel Microchip Electrospray Mass Spectrometry," Analytical Chemistry, Vol. 69, No. 3, pp. 426-430, 2/1/1997	
	C153	YANG, T. J. et al., "An Apertureless Near-Field Microscope For Fluorescence Imaging," Applied Physics Letters, Vol. 76, No. 3, pp. 378-380, 01/17/2000	
	C154	YANG, XING et al., "A Low Power MEMS Silicone/Parylene Valve," Solid-State Sensor and Actuator Workshop, Hilton Head Island, South Carolina, 4 pages, 6/7-11/1998	
	C155	YANG, XING et al., "A MEMS Thermopneumatic Silicone Membrane Valve," IEEE 10th Annual International Workshop of Micro Electro Mechanical Systems, Nagoya, Japan, pp. cover, 114-118, 1/26-30/1997	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/724,548
				Filing Date	November 28, 2000
				First Named Inventor	Stephen R. Quake
				Art Unit	1743
				Examiner Name	Brian J. Sines
Sheet	14	of	14	Attorney Docket Number	20174C-001120US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C156	YAZDI, NAVID et al., "Micromachined Inertial Sensors," Proceedings of IEEE, Vol. 86, No. 8, pp. 1640-1659, 8/1998	
	C157	YOUNG, A. M. et al., "Contoured Elastic-Membrane Microvalves For Microfluidic Network Integration," Journal of Biomechanical Engineering, Vol. 121, pp. 2-6, 2/1999	
	C158	ZACCOLO, MANUELA et al., "A Genetically Encoded, Fluorescent Indicator For Cyclic AMP In Living Cells," Nature Cell Biology, Vol. 2, pp. 25-29, 1/2000	
	C159	ZENGERLE, R. et al., "A Micro Membrane Pump With Electrostatic Actuation," Micro Electro Mechanical Systems '92, Travemünde, Germany, pp. 19-24, 2/4-7/1992	
	C160	ZENGERLE, R. et al., "Performance Simulation Of Microminiaturized Membrane Pumps," 7th International Conference on Solid-State Sensors and Actuators, Yokohama, Japan, pp. 2 cover pages, 106-109, 6/7-10/1993	
	C161	ZHANG, B. et al., "Microfabricated Devices For Capillary Electrophoresis-Electrospray Mass Spectrometry," Analytical Chemistry, Vol. 71, No. 15, pp. 3258-3264, 8/1/1999	

60627280 v1

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.